

## Bioaerosol in the marine boundary layer measured using an epifluorescence technique

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Bioaerosols which are primarily emitted into atmosphere (e.g., bacteria, fungal spore, pollen) play an important role in the climate change (as ice nucleating particles) and human health (as pathogens) (Frohlich-Nowoisky et al., 2016). Despite the fact raised above, the emission sources and mechanisms have not well characterized yet. One of the techniques to detect bioaerosol particles is autofluorescence which measures fluorescence from them excited by the light. Although autofluorescence is used for real-time monitoring of bioaerosol particles, this technique can be affected by the interference of non-biological compounds (Miyakawa et al., 2015). Epifluorescence, which is typically applied to microorganisms, can be used for the characterization of atmospheric bioaerosols (Hara and Zhang, 2012). Bioplorer (Koyo Sangyo) is an automated counting system of the bacterial concentrations on the chip with some reagent kits to stain bacteria (Nishimura et al., 2006). We have deployed autofluorescence instrument (WIBS4, DMT) and bioplorer in a wide range of atmospheric environment. We here present the temporal variations of bioaerosols measured using two techniques over the Southern Ocean in the late austral summer of 2017. We also discuss connections of behavior of bioaerosols with ocean and weather conditions.

### References

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